1878MNRAS..39....1.

MONTHLY NOTICES

OF THE

ROYAL ASTRONOMICAL SOCIETY.

VOL. XXXIX. *November* 8, 1878. NO. 1.

LORD LINDSAY, M.P., F.R.S., President, in the Chair.

The Rev. J. M. Coates, The Goddards, Moulton, Spalding; and
B. G. Jenkins, Esq., 4 Buccleuch Road, West Dulwich;
were balloted for and duly elected Fellows of the Society.

Dr. C. Brühns, The Observatory, Leipzig;
Baron H. von Dembowski, Gallarate;
G. W. Hill, Esq., New York; and
Prof. E. Schönfeld, The Observatory, Bonn;
were balloted for and duly elected Associates of the Society.

Observations at the Adelaide Observatory. By C. Todd, Esq., Director of the Observatory.

(*Extract from letter to the Astronomer Royal.*)

By to-day's mail I send you the following for the Royal Astronomical Society, viz.:—

Observations of transits, occultations, and eclipses of *Jupiter's* satellites in 1877.

Total eclipse of the Moon on the morning of February 28, 1877.

Partial eclipse of the Sun on February 2, 1878.

Transit of *Mercury* on May 6, 1878.

A few sets of east and west parallax observations of *Mars* at opposition were taken, which I must send you in a future letter. Some sets comprise a large number of differential measurements of R.A., but my chronograph was not very good, and the instrument required a better clamp in R.A. The observations may, however, possess some value, and I will therefore send them for what they are worth. With a better R.A. clamp, which I will make, and a new chronograph I have made since, I think I shall be able to secure better results in future.

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With regard to *Jupiter*, the visibility of the satellites through the edge of the planet has been very carefully looked for; and on two occasions I felt quite certain I saw the satellite at occultation within the disk, viz. on June 19, at occultation disappearance of Satellite II, and on July 2, at disappearance of Satellite I. Mr. Ringwood also saw the same phenomenon at the disappearance of Satellite II on August 29. I thought I could see Satellite III through the limb at reappearance on June 9, and Satellite II at disappearance on July 21, but could not be certain. In every other case the occultation was perfect at the limb. On June 19 Satellite II was visible through the white belt south of equator, and on July 2 Satellite I was seen for the space of one minute through the southern dark belt. It would be interesting to know whether this has been seen by other observers. The definition on each occasion was very good, or I should think I might be deceived.

I may mention that the other evening (July 5) I was surprised to see Satellite IV in transit appear as a dark spot instead of the usual bright point when on the less illumined surface near the edge of the planet; in fact it was at entry nearly as black as its shadow, which was just passing off on the other side. This I know has been seen before, both with Satellites III and IV, and must, I presume, be attributed to one side of the satellite reflecting less light than the other, or else to some violent changes in its atmosphere. Before it came on to the disk I noticed that it was fainter than usual.

It may be worth recording, perhaps, that in 1877 the dark belts of *Jupiter* had not, to my eye at least, the same bright metallic lustre that they had in 1876, but appeared to be covered with a thin haze and looked foggy. And this year the southern dark belt is seldom so highly coloured or so well defined as the northern one. I send you a few pencil sketches, which, however, possess very little merit. Please remember, when thinking how little I do, that I am also Postmaster-General and Superintendent of Telegraphs. My meteorological work is well advanced, but comes very slowly from the printer, especially when Parliament is in session. I send you the observations for January 1878, in which you will see I have made several alterations—I trust improvements. The rain stations are differently grouped, and the returns show at a glance the rainfall over different districts within and without the tropics, extending from the north to the south coast (27° of latitude and over 12° of longitude). The 1877 observations are nearly all printed and will be sent to you shortly.

Adelaide, South Australia,
8 *August* 1878.

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